THE CLAIMS

For the convenience of the Examiner, all pending claims of the present Application are shown below whether or not an amendment has been made.

1.   (Previously Presented)   A method of identifying problems in applications, comprising:

monitoring at a kernel level system resource usage of one or more running applications without modifying run-time environments of the one or more applications;

determining a system resource usage pattern of a first application, the system resource usage pattern indicating a change in the system usage of the first application from a first time period to a second time period;

determining whether the system resource usage pattern of the first application satisfies a predetermined criteria associated with one or more problems; and

if the system resource usage pattern of the first application satisfies the predetermined criteria, identifying the first application to a user.

2.   (Previously Presented)   The method of claim 1, wherein the system resource usage comprises a number of the one or more processes that each of the one or more applications have spawned and the predetermined criteria comprises exceeding a predetermined limit on the number of processes that each of the one or more applications may spawn.

3.   (Previously Presented)   The method of claim 1, wherein:

monitoring at a kernel level system resource usage of one or more running applications comprises monitoring a parent-child relationship between one or more running processes and each of the one or more applications; and

determining whether the system usage pattern of the first application satisfies a predetermined criteria associated with one or more problems comprises determining whether the first application has orphaned one of the one or more running processes.

4.   (Previously Presented)   The method of claim 1, wherein the system resource usage comprises memory usage of the one or more running applications.

5.   (Previously Presented) The method of claim 1, wherein:

the one or more applications comprise one or more user applications initiated at the user level; and

monitoring at a kernel level system resource usage of one or more running applications comprises monitoring at a kernel level system resource usage of one or more running processes belonging to one or more user applications wherein the one or more running processes comprise one or more processes initiated at the kernel level by the one or more user applications.

6.   (Previously Presented) The method of claim 1 wherein the system resource usage of the one or more running applications is monitored over a plurality of consecutive discrete time periods.

7.   (Previously Presented) The method of claim 6, wherein:

the system resource usage comprises an amount of memory usage for each of the one or more applications; and

the predetermined criteria is a limit on a number of memory increases allowed during the plurality of time periods.

8.   (Previously Presented) The method of claim 6, wherein:

the system resource usage comprises an amount of memory usage for each of the one or more applications; and

the predetermined criteria is a generally continuous increase in the amount of memory usage during the plurality of time periods.

9.   (Previously Presented) The method of claim 6, wherein:

the system resource usage comprises a number of processes that each of the one or more applications have spawned; and

the predetermined criteria is a generally continuous increase in the number of child processes spawned during the plurality of time periods.

10.   (Previously Presented) The method of claim 1, wherein identifying the first application to a user comprises saving an identifier of the first application in a reference file, and further comprising saving identifiers of any other of the one or more applications whose system usage pattern satisfies a predetermined criteria associated with one or more problems in the reference file.

11.   (Previously Presented)   The method of claim 10, wherein a computer automatically:

monitors the kernel level system resource usage of one or more running applications;

determines whether a system usage pattern of a first application satisfies a predetermined criteria associated with one or more problems; and

identifies the first application.

12.   (Previously Presented)   A method of identifying memory problems in applications, comprising:

monitoring at a kernel level memory usage of one or more running applications without modifying run-time environment of the applications; and

producing an output comprising at least the memory usage; and

determining a memory usage pattern of a first application, the memory usage pattern indicating a change in the memory usage of the first application from a first time period to a second time period;

determining whether the memory usage pattern of the first application satisfies a predetermined criteria associated with one or more problems; and

if the memory usage pattern of the first application satisfies the predetermined criteria, identifying the first application to a user.

13.   (Previously Presented) The method of claim 12, wherein:

the memory usage of the one or more running processes is monitored over a plurality of consecutive discrete time periods, and

the predetermined criteria is a limit on a number of memory increases allowed during the plurality of time periods.

14. (Previously Presented) A system for identifying memory problems in applications, comprising a computer operable to:

monitor at a kernel level memory usage of one or more running applications without modifying run-time environments of the one or more applications;

produce an output comprising at least the memory usage of one or more applications;

determining a memory usage pattern of a first application, the memory usage pattern indicating a change in the memory usage of the first application from a first time period to a second time period;

determine whether the memory usage pattern of the first application satisfies a predetermined criteria associated with one or more problems; and

if the memory usage pattern of the first application satisfies the predetermined criteria, identify the first application by saving an identifier of the first application in a reference file.

15.   (Previously Presented)   A method of identifying memory problems in applications, comprising:

monitoring at a kernel level memory usage of one or more running applications without modifying run-time environments of the running applications;

determining a memory usage pattern of a first application, the memory usage pattern indicating a change in the memory usage of the first application from a first time period to a second time period;

determining whether the memory usage pattern of the first application satisfies a predetermined criteria associated with one or more problems; and

if the memory usage pattern of the first application satisfies the predetermined criteria, identifying the first running application without identifying the one or more running applications whose memory usage patterns do not satisfy the predetermined criteria associated with the one or more memory problems.

16.   (Original)   The method of claim 15, wherein the monitored memory usage comprises at least a stack memory, data memory, and text memory.

17.   (Previously Presented)   A method of identifying memory problems in applications, comprising:

collecting system resource usage at a kernel level of one or more running processes belonging to one or more applications without modifying run-time environments of the one or more user running applications;

determining a system resource usage pattern of a first application, the system resource usage pattern indicating a change in the system resource usage of the first application from a first time period to a second time period;

determining whether the system resource usage pattern of the first application satisfies a predetermined criteria associated with one or more problems; and

if the system resource usage pattern of the first application satisfies the predetermined criteria, identifying the first application to a user.

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18.   (Previously Presented)   A system for identifying problems in applications, comprising:

a data collection module operable to retrieve information about a running user applications at a kernel level; and

a data analysis module operable to:

determine abnormal system usage pattern in the information; and

identify a first user application whose system usage pattern satisfies a predetermined criteria associated with one or more problems, the system usage pattern of the first user application indicating a change in the system usage of the first application from a first time period to a second time.

19.   (Previously Presented)   A program storage device readable by a machine, tangibly embodying a program of instructions executable by the machine to perform method steps of identifying problems in applications, comprising:

monitoring at a kernel level system resource usage of one or more running applications without modifying run-time environments of the one or more applications;

determining a system usage pattern of a first application, the system usage pattern indicating a change in the system usage of the first application from a first time period to a second time period;

determining whether the system resource usage pattern of the first application satisfies a predetermined criteria associated with one or more problems; and

if the system resource usage pattern of the first application satisfies the predetermined criteria, identifying the first application to a user.

20.   (Previously Presented)   The program storage device of claim 19, wherein the system resource usage comprises a parent-child relationship between one or more processes and each of the one or more applications; and

determining whether a system usage pattern of a first application satisfies a predetermined criteria associated with one or more problems comprises determining whether the first application has orphaned one of the one or more running processes.

21.   (Previously Presented)   The method of Claim 1, wherein determining whether a system usage pattern of a first application satisfies a predetermined criteria associated with one or more problems comprises:

comparing the monitored system usage for the first application against the predetermined criteria; and

selecting the first application from the one or more running applications if the system usage pattern of the first application satisfies the predetermined criteria.